

G. Take Authorization and Assurances, and Provisions for Unforeseen Circumstances

1. Take Authorization and Assurances from Wildlife Agencies

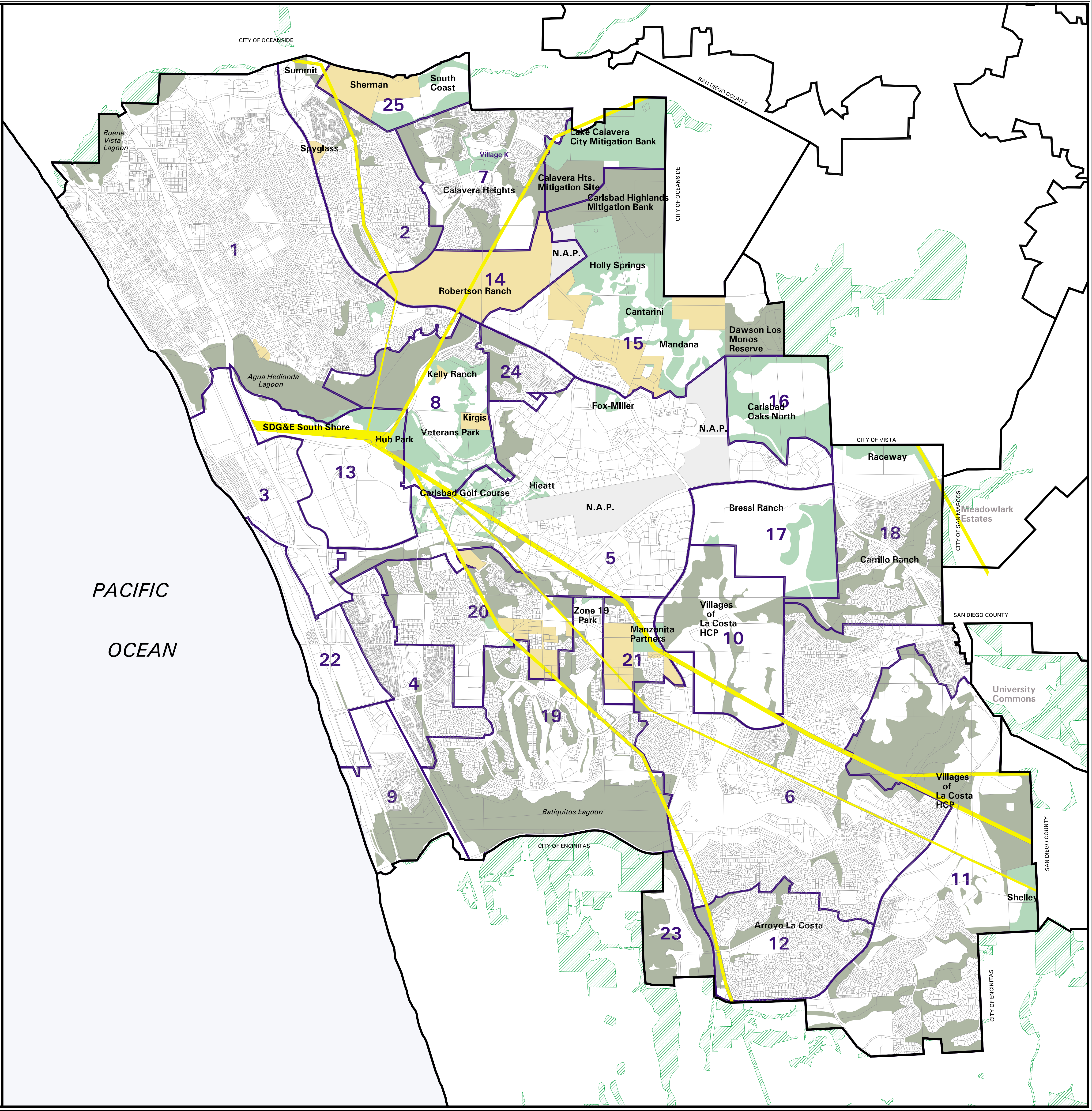
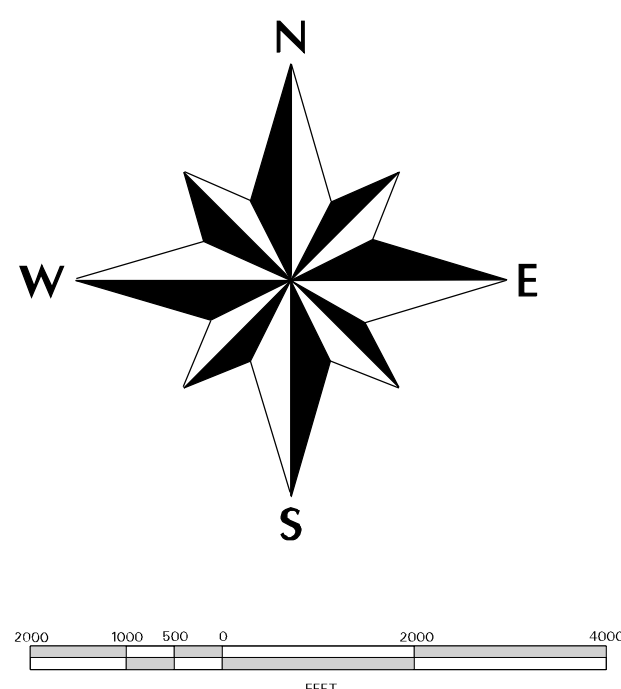
Implementation of the conservation strategy and the HMP by the City is predicated on assurances from USFWS and CDFG regarding authorization for take and approval of mitigation for impacts to HMP species. The authorizations and assurances that the City is seeking will be specified in detail in the Implementing Agreement (IA) that accompanies this HMP. These assurances from the agencies include:

- A. **Take authorization.** Projects covered by the HMP will be allowed to take California Gnatcatchers and the other species included on the HMP species list (Table 2), subject to the measures and conditions contained in Table 9 and Appendix C of the Plan. The justification for this authorization is implementation of the HMP. The specific justification on a species-by-species basis is contained in Appendix C. Take authorization for any species not identified on Table 2 is not being requested or approved at this time.
- B. **Elimination of the cap on CSS impacts.** Upon approval of the plan, the current 5% cap pursuant to the Federal 4(d) rule on CSS impacts will no longer apply to the City of Carlsbad.
- C. **Comprehensive mitigation for impacts.** Implementation of the measures identified in the HMP will be accepted as comprehensive mitigation for all impacts to HMP Covered Species and their habitats, including cumulative or growth-inducing impacts. Wetland impacts and mitigation will be subject to the City's wetland standards contained in Section D of the Plan. USFWS and CDFG will not require the City to commit additional land, additional land restrictions or additional financial compensation for impacts to HMP species beyond that provided in the Plan without the city's consent.
- D. **Other permits.** The authorizations and approvals only cover take of HMP Covered Species and impacts to natural upland vegetation. Other federal and state permit applications are still required for some projects, such as a Section 404 permit pursuant to the Clean Water Act or Section 1601/1603 agreement with CDFG. The HMP requires a no net loss of wetlands. Where such permits or agreements are required, the approved HMP shall be the mitigation program for all impacts to species included on the HMP covered species list (Table 2), however, all impacts to wetlands shall comply with the wetland standards contained in Section D of the Plan. In addition, habitat enhancement or creation measures required of projects under wetland and riparian protection laws will be coordinated with establishment and management of preserve system under the HMP.
- E. **Mitigation for City projects.** Lake Calavera will be utilized for mitigation credit for impacts to City projects consistent with a conservation bank agreement.
- F. **Severability from MHCP.** The Carlsbad HMP is a "stand-alone" plan for the conservation and coverage of the HMP species included on Table 2 of the Plan. The conservation levels for the covered HMP species are not dependent on any other regional or Subarea plan. Because of this and the City's contribution to the MHCP Core-Area as described in Section D of the Plan, the HMP is severable from the MHCP.

CITY OF CARLSBAD

HABITAT MANAGEMENT PLAN - Figure 28

- Existing Hardline Conservation Areas
- Proposed Hardline Conservation Areas
- Proposed Standards Areas
- Not A Part (N.A.P.)
- Development Areas
- SDGE Transmission Corridors
- Focused Planning Areas of Adjoining Jurisdictions
- Local Facility Management Zones



2. Provisions for Changed and Unforeseen Circumstances and "No Surprises" Rule

The HMP has been prepared recognizing that changed circumstances may occur after approval of the Plan. Changed circumstances are those changes affecting a species or geographic area covered by the HMP that can reasonably be anticipated at the time of preparation of the Plan and for which can be planned. Changed circumstances are natural occurrences such as fires, drought or flooding. The HMP has attempted to plan for these occurrences so that they do not result in an adverse change in the status of an HMP species. However, unforeseen circumstances may occur which could not have reasonably been anticipated when the HMP was prepared and which may result in a substantial and adverse change in the status of an HMP species. Unforeseen circumstances are those changes in circumstances which are not "changed circumstances," i.e., those circumstances affecting a species or geographic area covered by an HMP that could not reasonably have been anticipated by the City and the Wildlife Agencies at the time of the HMP development and that result in a substantial and adverse change in the status of a species covered by the HMP. The Services bear the burden of demonstrating that unforeseen circumstances exist, using the best available scientific and commercial data available, and considering certain specific factors.

The No Surprises rule generally provides that, as long as the HMP is being properly implemented, the federal government will not require additional land or money from the permittee in the event of unforeseen circumstances, and that any additional measures to mitigate reasonably foreseeable changed circumstances will be limited to those changed circumstances specifically identified in the HMP (and only to the extent of the mitigation specified in the Plan) without the City's consent.

The Rule has the following two major components:

- (A) Changed Circumstances: if additional conservation and mitigation measures are deemed necessary to respond to changes in circumstances that were provided for the HMP, the landowner will be expected to implement the measures as identified in Subsection 3 below, but only those measures and no others; and
- (B) Unforeseen Circumstances: the Services will not require the commitment of additional land, water or financial compensation or additional restrictions on the use of land, water or other natural resources, even upon a finding of unforeseen circumstances, unless the landowner consents. Upon a finding of unforeseen circumstances, the Services are limited to modifications within conserved habitat areas and the HMP's operating conservation program. Additional conservation and mitigation measures will not involve the commitment of additional land, water or financial compensation or additional restrictions on the use of land, water or other natural resources.

3. Changed Circumstances

Changed circumstances are defined by regulation as "changes in circumstances affecting a species or geographic area covered by a conservation plan that can reasonably be anticipated by plan developers and the USFWS and that can be planned for." Changed Circumstances to be addressed by the Carlsbad Habitat Management Plan (HMP) as described in this Implementing Agreement (IA) include the following:

1. Fire, occurring in the same location as a previous fire no sooner than three years following nor longer than ten years subsequent to an initial fire, and damaging up to 5 acres of Preserve habitat.
2. Flood events occurring within the Preserve Floodplains associated with the Encinitas, San Marcos, Agua Hedionda, Encinas and Buena Vista Creeks and their associated tributaries, at less than 50-year levels, as determined by the Carlsbad Department of Public Works.
3. Climatic drought up to three years in length, as declared by the California State Department of Water Resources and/or the San Diego County Water Authority.
4. An increase of invasive species within the Preserve to the extent that, as determined by the City in consultation with the Wildlife Agencies, such increase is of sufficient magnitude to significantly, adversely affect any Covered Species.
5. Disease, including West Nile Virus.
6. Listing of Non-Covered Species.

The USFWS and the City agree that the Changed Circumstances defined by this Exhibit to the Implementing Agreement represent all Changed Circumstances to be addressed by Carlsbad. These Changed Circumstances provisions reflect changes in circumstances that can reasonably be anticipated to occur to Covered Species or within dedicated Preserve areas. These Changed Circumstances provisions are not intended to cover the same or similar circumstances outside City jurisdiction nor if they occur within the Carlsbad HMP but outside of the Preserve and where the City has no legal authority to carry out the Planned Responses, nor if they occur within the proposed hard-line Conservation Areas depicted on Figure 6 of the HMP but before the land is lawfully dedicated or conveyed to the Preserve.

Except for the future Listing of a non covered species, each of the defined Changed Circumstances includes an assessment of risk, a description of preventative measures, and a summary of Planned Responses (measures to be undertaken in the case of Changed Circumstances). Preventative measures are those measures that are or will be undertaken by the City to reduce the potential for occurrence of the Changed Circumstances, and/or that reduce the potential for damage to the Preserve resulting from a Changed Circumstance event. Planned Responses are the specific responses that will be undertaken in the event of a Changed Circumstance. Planned Responses will not include any actions beyond those expressly identified in this Exhibit, nor for any event not specifically identified as a Changed Circumstance. Planned Responses will be implemented to the extent that it is possible to do so and remain consistent with the primary goal to prevent harm to the public health, safety and welfare. Planned Responses will be implemented by using the funding sources described in Section 14 of the IA for each of the Changed Circumstances, and only to the extent provided by the identified funding sources.

1. Repetitive Fire

For the purpose of defining Changed Circumstance, Repetitive Fire is defined as fire, occurring in the same location as a previous fire no sooner than three years following nor longer than ten years subsequent to an initial fire, and damaging up to 5 acres of Preserve habitat.

1.1 Risk Assessment

Because fire is a natural feature within the chaparral and coastal sage scrub vegetation communities, under normal circumstances natural re-growth of habitat is expected. However, the Wildlife Agencies have indicated that certain Repetitive Fires within the same location of the Carlsbad Preserve may adversely affect the Covered Species conserved by the HMP as a result of habitat type conversion from existing habitat(s) to invasive or non-native weeds.

USFWS has indicated that if the habitat types prevalent in this Preserve, including coastal sage scrub, maritime succulent scrub and riparian habitat, burn within the same footprint within ten years of the original burn, the fires can adversely hamper natural re-growth and interrupt the ability of the habitat to rejuvenate. After twenty years, habitat types prevalent in the Preserve are expected to be fully re-established and capable of natural regeneration. A "Repetitive Fire" (a fire anticipated to occur and to

create the potential for type conversion) is therefore considered a fire incident which occurs in the same location as a previous fire incident (initial fire) no more than ten years subsequent to the initial fire.

In addition, Carlsbad Fire Department (CFD) officials note that vegetation that has been burned requires approximately five years to grow before becoming a potentially hazardous fuel load. It is therefore not anticipated that Repetitive Fire, if it were to occur, would occur in the same location for at least three-to-five years subsequent to an initial fire. For the purpose of defining Changed Circumstances, the City has determined that a Repetitive Fire occurring within the first three years subsequent to an initial fire is therefore not reasonably anticipated.

The Carlsbad Fire Department has responded to 80 incidents involving fire in brush or wildland areas within the City.

1999	54 fires	Acres burned 16.3	Average 0.3
2000	18 fires	Acres burned 26.7	Average 1.5
2001	4 fires	Acres burned 6.1	Average 1.5
2002	3 fires	Acres burned 1.2	Average 0.4
2003	1 fire	Acres burned 0.5	Average 0.5

As the City has developed much of the wildland interface, the number of fires has been dramatically reduced as reflected in these statistics.

As Carlsbad experiences higher humidity than inland cities, fog and cooler temperatures, the moisture content tends to be higher and temperatures less severe. Higher moisture content and cooler temperatures make large fire incidents greater than 5 acres, rare. In addition, Carlsbad is flanked on all sides by urban development and has built out much of the open space replacing such with commercial and residential development thus also reducing the likelihood of a fire occurring greater than 5 acres in size. Thus, the scope of fire incidents within the Preserve is expected to be much smaller than that of wildland fires in less urban situations.

Because implementation of the HMP will result in larger areas of undeveloped, protected habitat than previously existed within City boundaries, the Carlsbad Fire Chief assessed the potential that future repetitive fire incidents may burn areas greater than five acres before containment, during the life of the permit.

All of the Management Units are primarily surrounded by and often times broken up by urban, residential, and commercial development, limiting the ability of fire to easily spread from area to area. The Calavera, Poinsettia/Aviara and Villages of La Costa Management Units will be the largest contiguous areas of habitat within the City. The Villages of La Costa unit is adjacent to County Preserve land to the east and is the area most vulnerable to fire originating from outside the City with the potential to burn a large area.

Cores 4 and 8 include Agua Hedionda and Batiquitos Lagoons respectively and associated riparian habitats. Moist marsh and riparian vegetation does not represent high-risk fire fuel loads and, in fact, will serve to hinder fire activity in these areas.

Based on review of available data, knowledge of existing fire fuel loads, fire suppression experience and anecdotal information, the Carlsbad Fire Chief has determined that fire damage from Repetitive Fire within the Preserve up to 5 acres is foreseeable during the life of the permit. Damage greater than 5 acres due to Repetitive Fire is not foreseeable and would be considered an Unforeseen Circumstance.

1.2 Preventative Measures

Preventative measures to reduce the likelihood of, or harm from a single fire in the Preserve are included in the adaptive management provisions as specified in the draft Open Space Management Plan and will be more specifically identified in the Fire Management Plans for each Management Unit.

Proximity of Fire Services to Preserve Areas

The Carlsbad Preserve is primarily an urban Preserve that is almost entirely surrounded by urban uses. Although the presence of urban uses may increase the potential for fire incidents, it greatly decreases the potential for large, non-contained fires due to the proximate location of buildings. Additionally, urbanization causes fire department responders to be located closer to the Preserve areas facilitating a rapid response. Rapid response leads to fewer acres burned. The average response time to fire incidents within the City is approximately five minutes.

Brush Abatement Program

In order to further reduce the risk of fire, the City has instituted a weed abatement urban-wildland-interface management program. This program focuses predominately on areas interfacing urban and open space Preserve lands. Through this Preserve urban-wildland-interface fire risk management program, interface areas are inspected annually for fire load and fire risk. Areas determined to be at risk for the spread of fire from open space to structures are ordered abated. Using this program, the City is able to annually implement its urban-wildland-interface management program as it relates to proximity to structures to reduce fire risk in the areas between development and the Preserve.

Fire Management Plan

The City will update its Fire Management Plans (Section 3.1.4 of the Open Space Management Plan) to identify the procedures the City will implement both prior to and during any single fire in the Preserve. The Fire Management Plans will provide that the City will coordinate an emergency notification and response system that will strive to protect the Covered Species and the Preserve, to the extent that it is possible to do so and remain consistent with the primary goal of containing and extinguishing the fire to prevent harm to the public health, safety and welfare. The Fire Management Plans will provide for a triage system that includes notification of the Wildlife Agencies as soon as feasible after the onset of the fire. The Fire Management Plans will also provide for restricted public access to portions of the Preserve in times of severe drought, or whenever the Fire Department determines that a fire hazard may be high.

1.3 Planned Responses to Repetitive Fires

Upon the occurrence of a Repetitive Fire Changed Circumstance as defined by this Exhibit, the City will notify the Wildlife Agencies pursuant to the protocol which will be established by the City's Fire Management Plans. Within 30 days of the Repetitive Fire incident, the City will assess the damage cause by the Repetitive Fire within the Preserve. Depending upon the extent and severity of the fire damage, and as determined by the City, with concurrence of the Wildlife Agencies, the City will take the following action:

Develop and implement a monitoring program to monitor natural re-growth within the damaged area for a period of up to 2 years. The monitoring program will provide for site visits on a regular basis, as determined by the City and the Wildlife Agencies to be appropriate to the scope and severity of the burn. Management of the burned area will emphasize removal of weeds and preventing infestation by invasive species. Should monitoring observations indicate that invasive species control efforts have not been effective and there is an unacceptable level of invasion by exotic species and/or increased potential for type conversion, the Preserve management program in effect at the time will be modified to eliminate the infestation and reduce the potential for such invasion and/or type conversion.

2. Flood

For the purpose of defining Changed Circumstance, Flood is defined as natural rain runoff events occurring within and causing damage to Preserve floodplains associated with the City's four watersheds, Batiquitos, Agua Hedionda, Encinas and Buena Vista, and their associated creeks and tributaries, at less

than 50-year levels, as determined by the Carlsbad City Engineer. Damage to the Preserve due to Flood at greater than a 50-year level is defined as Unforeseen.

2.1 Risk Assessment

The Federal Emergency Management Agency (FEMA) provides local jurisdictions with mapping that defines the areas that may be affected, or inundated, by flood. FEMA typically addresses the 100-year flood event and its consequences for people and structures. A 100-year flood, as defined by FEMA, produces a magnitude of inundation that has a one percent chance of occurring in any given year. A 50-year event is not specifically addressed by FEMA but is often referred to by hydrologists as an intermediary scale of event. The 50-year storm has a 2% chance of occurring in any given year. Both the 100 year and 50 year events are capable of causing significant damage to property through inundation, erosion, and mud flows. However, flooding is a natural event and is not anticipated to cause damage sufficiently severe to prevent natural regeneration of existing habitats within the Preserve.

Information on flooding potentials is available from several sources. FEMA maps on file with the City of Carlsbad Engineering Department identify the 100-year flood zones located within the Preserve. Areas that would be subject to flooding in a 50-year event are not mapped by FEMA but can be generally inferred. These areas primarily follow the creeks which form the watersheds named above, and are essentially confined to natural drainage channels and riparian areas, where water has historically been known to occur.

Information is also available from the County of San Diego's Hydrology Manual dated June 2003, which examines flooding potentials on a regional basis. The City of Carlsbad has a Flood Plain Ordinance (Chapter 21.110 of the Municipal Code), which outlines the requirements for development within floodplains.

With the exception of Encinas Creek, the watersheds within Carlsbad terminate in coastal lagoons or estuaries which are themselves part of the preserve. The City's three lagoons – Buena Vista, Agua Hedionda, and Batiquitos – have direct connections with the Pacific Ocean. Batiquitos and Agua Hedionda Lagoons have permanent openings to the ocean and are therefore primarily saltwater ecosystems. Buena Vista Lagoon has a weir near its mouth, which regulates water level and produces a primarily freshwater ecosystem. Encinas Creek flows directly to the ocean.

These lagoons have significant capacity for receiving floodwaters and transferring them to the ocean without impacts to the lagoon ecosystems. This analysis will therefore look at possible effects upstream from the lagoons. The upstream conditions of the four watersheds differ in several respects, and each is discussed below.

Buena Vista Watershed – Buena Vista Creek is the primary drainage within this basin. It originates in Vista and flows through highly urbanized and disturbed areas before entering Carlsbad. Within Carlsbad it flows through a longstanding rock and gravel processing facility, passing into a largely undeveloped floodplain valley with a well-developed willow riparian corridor. The creek again enters an urbanized zone before entering the Buena Vista Lagoon. The creek receives some runoff from adjacent Highway 78. Portions of the creek are lined or channelized. Major bridge structures exist at El Camino Real, I-5, Carlsbad Boulevard, and the railroad trestle. Culverts exist at other road crossings. Although the topography of the creek valley is relatively gentle, the creek does develop significant flows quantities and velocities during storm events.

Agua Hedionda Watershed – The sources of this basin are Calavera Creek and Agua Hedionda Creek. Calavera Creek originates in Oceanside and enters Carlsbad at Lake Calavera, a man-made reservoir. From the lake, the creek descends steeply to currently agricultural land before entering Agua Hedionda Lagoon. None of Calavera Creek is presently lined or channelized. Agua Hedionda Creek originates in Vista and enters Carlsbad at the Dawson-Los Monos Reserve. There is one tributary known as Little Encinas Creek. The creeks descend steeply through agricultural land until they reach El Camino Real

where they merge and enter the lagoon. The portion of Agua Hedionda Creek passing through Rancho Carlsbad is channelized and a portion of Little Encinas Creek is riprap lined. Major bridge structures are at I-5, the railroad trestle, and Carlsbad Boulevard. Culverts exist at other road crossings. Flood quantities and velocities can be high.

Encina Watershed – This is the smallest basin, originating in Carlsbad near El Camino Real and Palomar Airport Road. Nearly the entire length is urbanized, although some portions support small stands of native riparian vegetation. Portions are channelized. There is significant infestation of Pampas Grass at the western end. Flood quantities and velocities are relatively low. There are no major bridges. The creek outlets to the ocean through a small bridge on Carlsbad Boulevard.

Batiquitos Watershed – San Marcos Creek and Encinitas Creek are the major flows into Batiquitos Lagoon. The watershed of San Marcos Creek is large and originates well outside of Carlsbad. For current purposes we will begin at Lake San Marcos. The creek flows through a very steep, rock walled canyon. Quantities and velocities can be very high. At the bottom of the canyon the creek passes through the La Costa Golf Course before entering the lagoon. Major bridge structures exist at Rancho Santa Fe Road and at El Camino Real. Encinitas Creek originates in the southeastern corner of Carlsbad. It flows through partially developed areas of both Carlsbad and Encinitas. A well-developed willow riparian corridor exists in the Green Valley area, just before the creek enters the lagoon. There are no major bridge structures. Quantities and velocities are moderate.

For purposes of new development, City land use policies require construction of lined channels, storm drains, detention basins, and other improvements to accommodate floods up to and including a magnitude of 100-year, and require that drainage facilities manage flows into tributary streams to approximate natural flows. This is intended to enable floodplains to function in their natural capacity, permitting unobstructed flows through natural riparian courses during flood events. However, the actual behavior of floods in natural stream courses is difficult to predict or control. Vegetated streams that are not lined or armored may respond to flood waters very differently from urbanized storm drain facilities, particularly in very large storm events. Thus, for purposes of habitat conservation planning, the 50-year event is used as the definition of Changed Circumstance because it is the magnitude of event that can be reasonably anticipated and planned for.

2.2 Preventative Measures

Preventative measures to reduce the likelihood of or harm from flooding in the Preserve are included in the adaptive management provisions as specified in Section 1.1 of the Open Space Management Plan. City land use policies ensure that public and private improvements accommodate flood events that approximate the rate, magnitude and duration of natural flood flows.

All development projects approved by the City will also include implementation of Best Management Practices for storm water and surface runoff pursuant to the standards promulgated by the California Regional Water Quality Control Board (RWQCB). For all discretionary projects approved by the City, the City will include mitigation measures or other conditions, as appropriate, to reduce the likelihood that a flood would adversely impact Covered Species and the Preserve. As a co-permittee of the RWQCB National Pollution Discharge Elimination System (NPDES) Permit, the City is required to adopt a Standard Urban Storm Water Mitigation Plan (SUSMP). The large majority of new development projects and significant redevelopment projects must meet SUSMP requirements to reduce pollution and runoff flows. The City's SUSMP will include a list of recommended source control and structural treatment Best Management Practices (BMPs).

2.3 Planned Responses for Flood

Upon the occurrence of a Changed Circumstance Flood as defined by this Exhibit, the City will notify the Wildlife Agencies pursuant to the protocol established by the City's Open Space Management Plan. Within 30 days of the Flood incident, the City will assess the damage caused by the Flood within the

affected drainages to determine, with concurrence of the Wildlife Agencies, if a monitoring program is required. Damage would typically be expected to consist of erosion to the main channel or bank, possibly with loss of riparian vegetation.

Should the extent and severity of the Flood damage indicate a need for monitoring, the City will develop and implement a monitoring program for a period of up to two years, to monitor natural re-growth within the damaged area. The monitoring program will provide for site visits on a regular basis, as determined by the City and the Wildlife Agencies to be appropriate to the scope and severity of the Flood damage.

At any time during the monitoring program, should monitoring observations indicate that allowing habitat to re-grow without interference is resulting in increased opportunity for invasion by exotic species and/or increased potential for type conversion, as determined by the City, the Preserve management program, in effect at the time, will be modified to reduce the potential for such invasion and/or type conversion, consistent with the Open Space Management Plan and the terms of the IA. One or more of the following management activities will be incorporated into the modified management program, as appropriate for the circumstance:

- Bank stabilization
- Removal of sediment and/or debris; and/or
- Controlling non-native weeds and other invasive species through approved techniques.

3. Drought

For the purpose of defining Changed Circumstance, Drought is defined as climatic drought for three consecutive years in length, as formally declared by the California State Department of Water Resources and/or the San Diego County Water Authority (CWA).

3.1 Risk Assessment

Drought is a cyclical weather phenomenon that is beyond human control. Drought is not uncommon in Southern California, and it is a phenomenon to which local natural habitats and species have of necessity adapted over time. Drought occurs slowly over a multi-year period, differing from the catastrophic events of fire and flood, which occur rapidly and afford little time for preparing for disaster response. Drought conditions may adversely affect the Covered Species and the conserved vegetation communities, if the species and/or habitats are unable to adapt to the changing conditions.

The potential for drought to impact the Preserve increases with the length of a drought. As Preserve species and habitats begin to react to a prolonged reduction in rainfall, carry-over supplies in reservoirs are depleted and water levels in groundwater basins also decline, making imported water resources less available for non-potable uses. Both San Diego County and the City rely heavily on imported water. However, according to the California Department of Water Resources (DWR) in their document "Droughts in California," droughts exceeding three years are rare in Northern California, the area of California that is the source of much of the State's developed water supply and of imported water for Southern California. A drought period of over three years in length, which restricts availability of water for Preserve purposes, is therefore not foreseeable, and would be considered an Unforeseen Circumstance.

3.2 Preventative Measures

The HMP does not contain measures to prevent climatic drought because drought is not preventable by human intervention.

The City of Carlsbad is served by the Carlsbad Municipal Water District (CMWD), which is a member of, and purchases imported water from, the San Diego CWA. In order to reduce reliance upon imported water, CMWD is developing a recycled water plant adjacent to the Encina Wastewater Treatment Plant. Recycled water distribution lines are planned for construction throughout the City, including areas adjacent

to the Preserve in all Management Units. Recycled water is used for non-potable water requirements such as landscape and park maintenance. In the event of drought, recycled water would be used to supply any supplemental water for Preserve maintenance, greatly reducing the risk of impact from drought on Preserve species and habitats.

To prepare for a potential diminished water supply, the City will assess its use of recycled water Citywide, and will consider directing recycled water to Preserve areas undergoing active restoration where water is needed, and where it is possible to do so. It is acknowledged that it may not be feasible to use recycled water for active restoration areas in times of drought or diminished water supply. However, to the extent that it is able, the City will work with responsible water agencies to determine whether adequate recycled water supplies would be available to serve restoration areas in the Preserve.

3.3 Planned Responses to Drought

Upon the occurrence of a drought Changed Circumstance as defined in this exhibit, the City and the Wildlife Agencies will assess the condition of the Preserve to determine, if a monitoring program is required for all or portions of the preserve.

Based upon the extent and severity of the Drought, the Wildlife Agencies will develop and implement an assessment of the condition of the Preserve to determine whether target species are being affected or whether there is the potential for damage to the Preserve. Based on the results of the assessment, the Wildlife Agencies will implement a monitoring program to monitor natural re-growth within the damaged area for a period of up to two years. The monitoring program will provide for site visits on a regular basis, as determined by the City and the Wildlife Agencies to be appropriate to the drought situation.

At any time during the monitoring program, should monitoring observations indicate that allowing habitat to re-grow without interference is resulting in increased opportunity for invasion by exotic species and/or increased potential for type conversion, as determined by the City in consultation with the Wildlife Agencies, the Preserve management program in effect at the time will be modified to reduce the potential for such invasion and/or type conversion, consistent with the terms of the IA. One or more of the following management activities will be incorporated into the modified management program, as appropriate for the circumstance:

- (i) Providing temporary irrigation to strategic areas of the Preserve; and/or
- (ii) Controlling non-native weeds and other invasive species through approved techniques.

4. Invasion of Exotic Species

For the purpose of defining Change Circumstance, invasion of exotic species is defined as an increase of invasive species within the Preserve to the extent that, as determined by the City in consultation with the Wildlife Agencies, such increase is of sufficient magnitude to significantly, adversely affect any Covered Species. For the purpose of implementing the actions specified by this Exhibit, species to be considered potentially invasive are those included in Section 3.1.5 of the Open Space Management Plan.

4.1 Risk Assessment

Although invasive, exotic, or pest species of plants and/or animals may currently be present within the Preserve, an unexpected and/or sudden increase in certain invasive species may create the potential for impacts to one or more of the Covered Species within the Preserve. Opportunities for increases in invasive species could occur as urban development expands in areas surrounding the Preserve. The occurrence of a catastrophic event, including Changed Circumstances defined above, may precipitate sudden increases of invasive species. Planned Resources to the Changed Circumstances, however, include measures to reduce the opportunity for invasion by exotic species.

4.2 Preventative Measures

Establishment of the Preserve and the management actions that will be undertaken as part of the implementation of the HMP will reduce the probability of sudden increases in invasive species. Section 3.1.5 of the Open Space Management Plan contains measures specifically designed to prevent invasive species from threatening the Preserve. These measures include restrictions on the use of invasive plant species in landscape palettes, visitor/resident invasive species education, and working with adjacent properties to prevent runoff into the Preserve. Through implementation of the Open Space Management Plan and Area Specific Management Directives associated with the HMP, invasive species will, under normal circumstances, be discovered prior to becoming a threat to Covered Species. When invasive species are discovered, the Preserve management program is designed to be tailored to reduce and/or eliminate such species.

4.3 Planned Responses

If, as determined by the City in consultation with the Wildlife Agencies, an increase in invasive species has occurred within the Preserve at a magnitude sufficient to present a significant adverse affect to any Covered Species, the City will notify the Wildlife Agencies pursuant to the protocol established by the City's Open Space Management Plan described in Section 3.1.5. If the influx of invasive species involves a species included on the CalEPPC "List A" or the NBII list (Appendix N), within 30 days of such notice to the Wildlife Agencies the City will assess and implement changes to the adaptive management program in effect at that time, that may be necessary to control the invasive species. If the influx of invasive species involved a species listed on the CalEPPC "Red Alert" list (Appendix N), the City will also notify other relevant agencies as recommended by CalEPPC. Within 30 days of obtaining responses from the agencies contacted, the recommendations of the agencies will be used by the City with concurrence of the Wildlife Agencies to determine appropriate modifications to be made to the adaptive management program in effect at that time.

Modification of the adaptive management program to address an invasive species Changed Circumstance will include implementation of a monitoring program of up to two years, as determined by the City. The monitoring program will provide for site visits on a regular basis, as determined by the City and the Wildlife Agencies to be appropriate to the type, scope and location of the exotic species infestation.

5. Disease – West Nile Virus

West Nile Virus (WNV) is a mosquito-borne disease that infects both wild and domesticated bird species, livestock, humans, and various other species. The disease can be fatal. WNV was first detected in the United States in the State of New York in 1999. The illness has spread from East to West across the United States by birds and mosquitoes. WNV was first detected in California in Imperial County on August 20, 2003. In 2003, the virus has since been discovered in dead birds collected from Los Angeles County, Riverside County, Imperial County, Orange County, and San Diego County. WNV has shown positive in one horse and 5 dead birds in San Diego County in 2003. In 2004, additional WNV positive birds and positive sentinel chicken flocks have been found, including dead infected birds in Carlsbad.

WNV is a region-wide issue, not restricted to Carlsbad. It is addressed here as a Changed Circumstance because we are aware that there are infected birds in Carlsbad and throughout the region. It is not possible at this time to define with any precision a threshold between Changed Circumstances due to WNV and Unforeseen Circumstances. The following discussion is offered to describe what we currently understand about the disease and efforts to respond to it.

5.1 Risk Assessment

Thus far WNV has not killed large numbers of wild birds, but the overall extent of the infection in wildlife is not well understood. There is the potential for the disease to become a significant mortality factor to

certain bird species. On the other hand, because the disease is a threat to human health, current prevention activities (as outlined below) are likely to reduce the threat to both humans and wildlife. Because public health officials use bird deaths to gauge the effectiveness of their WNV prevention programs, any significant increase in bird deaths is likely to produce public concern, leading to intensified efforts to halt spread of the disease.

5.2 Preventive Measures

Mosquito control is probably the single most important and effective element in inhibiting spread of WNV to all species. In San Diego County, mosquito abatement is carried out by the Vector Control Program of the County Department of Environmental Health. Concern about WNV and other mosquito-borne diseases has led Vector Control to expand its efforts to control mosquito populations. These activities have included aerial spraying/application of mosquito larvicide (*Bacillus sphaericus* (Bs) and *Bacillus thuringiensis israelensis* (Bti)) of large bodies of fresh water, spot spraying or hand broadcasting of bascillus (Bs and Bti) of smaller waterbodies, distribution of fish that eat mosquito larvae to property owners with ponds, and public education to encourage abatement of miscellaneous sources of standing water. These preventive measures have been largely effective as evidenced by the relatively low death rate from the disease.

A secondary preventive measure is the heightened public awareness of the fact that the disease can be fatal to birds. County Vector Control and other agencies have carried out an extensive educational campaign to inform the public that dead birds should be reported to them. Tests are performed on dead birds to determine whether the bird was infected with WNV. Although this level of monitoring of bird deaths is far from complete, it provides the best information available about the extent and virulence of the disease in wild bird populations.

5.3 Planned Responses to WNV

Any indications of increase in human or animal mortality due to WNV would be treated as a very serious public health concern and would receive a high level of response. Mosquito abatement activities by County Vector Control would be intensified, as well as public information activities directed toward elimination of standing water and reporting of dead birds. Any chemical response to WNV other than application of *Bacillus* (Bs and Bti) larvicide would need consultation and approval by the Wildlife Agencies prior to such application to ensure impacts to other species covered by the MHCP would not be adversely affected beyond that currently analyzed.

Because of the potential risk to human health, normal budgetary limitations would not be allowed to constrain efforts to halt the disease. These activities will benefit bird species and well as people, so that it is not necessary to have programs directed solely toward addressing the disease in wildlife. In addition, planned responses to the disease are carried out on a regional basis. Carlsbad would not be alone in attempting to respond to a major outbreak.

6. Future Listings of Non-Covered Species

The City recognizes, as noted in the USFWS discussion of its "Habitat Conservation Plan Assurances ('No Surprise') Rule," (63 F.R. 8859; February 23, 1998), that the future listing of a species whose conservation was not provided for in the MHCP to a level sufficient to include the species as a Carlsbad Covered Species can be viewed as a Changed Circumstance. In the event that a species, which is not a Covered Species pursuant to this Plan and associated Take Authority is listed by USFWS subsequent to the issuance of Take Authority pursuant to the HMP, such listing will be considered a Changed Circumstance.

In the event of a non-covered species, the City and Wildlife Agencies will jointly identify measures that the City will follow to avoid take, jeopardy and/or adverse modification of any designated Critical Habitat within the Subarea, until and unless the City's permit is amended to include coverage for the newly-listed species as a Carlsbad Covered Species or the Wildlife Agencies notify the City that such measures are no longer

required to avoid jeopardy, take or adverse modification of designated Critical Habitat of the newly-listed species. Among other measures, the City will require that prior to the City's issuance of any permit for land development, clearing and/or grubbing, applicants must obtain Take Authority for any listed, non-covered species through appropriate federal and/or state permit processes.

Changed Circumstances Not Provided for in the HMP

Pursuant to the "No Surprises" rule at 50 C.F.R. 17.22(b)(5)(ii), the USFWS may not require (1) any conservation or mitigation measures in addition to those provided for under Sections 5.8.1 – 5.8.4 in response to a Changed Circumstance; or (2) additional conservation or mitigation measures for any Changed Circumstance that is not identified in Sections 5.8.1 – 5.8.4 without the consent of the City, provided the City is properly implementing the HMP.

As recognized in the "No Surprises" rule at 50 C.F.R. 17.22(b)(6) and 17.32(b)(6), the USFWS, any Federal, State or local agency, or a private entity may take additional actions at their own expense to protect or conserve a species covered under the HMP.